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First Occurrence of the Violet Goby in Georgia

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DURING a routine weekly survey of the aquatic fauna and flora of an undisturbed salt marsh ecosystem, one living specimen of the violet goby, *Gobioides broussonneti* Lacépède, was collected. Previous collections of this species are reported by Gunter and Hall (1963), Kritzler (1950), Miller (1966), and Tagatz (1968).

The violet goby has been collected from the following places in the United States: St. Johns River, Florida; inland waterway near Salerno, Florida; St. Lucie Estuary, Florida; New Orleans; and Freeport, Texas. Gunter and Hall (1963) report collecting *G. broussonneti* from salinities of 0.22-0.24 parts per thousand (the salinities being determined by chloride titrations and by a hydrometer). Miller (1966) reported these fish to be included among the fresh water fishes of Central America, however no salinity ranges were reported. Kritzler (1950) examined a specimen after it had been caught in the intake screens to a power plant and then preserved and kept at the Jacksonville Florida Children's Museum for identification. Fowler (1947) reports identifying a violet goby captured and preserved nearly a month earlier. In both instances cited above the authors did not see the living fish and consequently only speculated as to its appearance prior to fading in the preservative. Tagatz (1968) collected seven *G. broussonneti* from the St. Johns River, Florida, in salinities ranging from 0.0-23.7 parts per thousand and a temperature range of 16.8-34.4C.

The violet goby reported herein was captured 2 July 1969 in the Duplin River Estuary, Sapelo Island, Georgia. The fish was captured in a 10 foot otter trawl, 3/4" mesh, using a two speed of 2.0 knots. The trawl was made against the tide; the tide was within

one-half hour of high slack water. The water temperature in which the violet goby was captured was 29.5C, while the salinity of the water was 23.0 parts per thousand.

All proportional measurements were made in terms of standard length unless otherwise noted. Measurements of the fish are listed in Table 1. Table 2 provides a comparison of the measurements of the fish captured with those reported elsewhere in the literature. These determinations were all taken on the freshly captured specimen prior to preservation in 10 per cent hexamine buffered sea water formalin. General body shape and coloration closely resemble specimens described by Jordan and Everman (1902).

The specimen described above represents the first reported occurrence of the violet goby north of Florida. This is the second time also that the fish has been collected in higher salinity waters. Further observations on the osmoregulatory ability of this fish are needed to determine whether it should be described as a fresh

TABLE 1
Measurements of *Gobioides broussoneti* from Duplin River Estuary,
Sapelo Island, Georgia

Total length	400 mm
Standard length	315 mm
Body depth	12.6 in. Standard Length (S.L.)
Depth of caudal peduncle	21.0 in. S.L.
Predorsal length	4.6 in. S.L.
Length of dorsal	1.3 in. S.L.
Length of anal	1.7 in. S.L.
Height of dorsal	24.0 in. S.L.
Head length	6.1 in. S.L., 2.5 snout to vent
Length of caudal	3.8 in. S.L.
Depth of head	12.6 in. S.L.
Width of head	10.5 in. S.L.
Snout length	5.8 in. head
Postorbital length	9.0 in. S.L.; 1.5 in. head
Length of eye	13.0 in. head
Length of longest pectoral	11.6 in. S.L.
Length of longest pelvic	11.6 in. S.L.
Length of upper jaw	15.0 in. S.L.; 2.5 in. head
Length of mandible	16.5 in. S.L.; 2.7 in. head
Vent to caudal peduncle	1.8 in. S.L.
Vent to snout	2.3 in. S.L.
Interorbital space	1.25 diameter of eye

TABLE 2

Comparison of measurements of *Gobioides broussonneti* from Duplin River Estuary and *G. broussonneti* from Jordan and Everman (1902) and Kritzler (1950)

Measurement	Duplin River	Jordan & Everman	
		Everman	Kritzler
Depth in standard length	12.6	13	11
Head length in standard length	6.1	5.25-7.0	6.8
Head length in snout to vent	2.5		2.6
Head width in head length	1.4		1.3
Length of eye in head length	13.0	7-10	12.6
Least depth of caudal peduncle in head length	2.8		2.9
Length of largest pectoral in head length	1.9		1.6
Length of largest pelvic in head length	1.9		1.4
Interorbital space (in eye diameter)	1.25	1-1 1/3	
Snout length in head	5.8		4.75
Interorbital in snout	1.8		1.4
Least depth of caudal peduncle in head	3.5		2.9

water fish which strayed into the estuary or whether it is a truly euryhaline species.

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